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National Reye Syndrome Surveillance — United States, 1982 and 1983

For the 1982 and 1983 surveillance years,* CDC received written reports of 222 and 191 cases of Reye syndrome, respectively, that met CDC's case definition.† Cases were reported from 45 states in 1982 and 38 states in 1983. Although delayed reports will increase the number of cases for 1983, these two annual totals are presently the lowest reported since continuous national surveillance was established in December 1976 (Table 1).

The sexes, ages, and racial distribution of patients were very similar in 1982 and 1983. Of patients for whom this information was reported, approximately 50% were female; approximately 93%, white; 5%, black; and 1%-2%, of Asian extraction. Over half (56% in 1982 and 51% in 1983) were 5-14 years of age; 37% and 40%, respectively, in each of the 2 years were 4 years of age or under; 6% and 7%, respectively, 15-17 years of age; and 1% and 3%, respectively, 18 years of age or older.

As in previous years, most patients (at least 67% in 1982 and 74% in 1983) were hospitalized in the first 6 months of the surveillance year. This primarily winter and spring seasonal

*For the purposes of surveillance, Reye syndrome years extend from December 1 to November 30 (i.e., the 1982 year runs from December 1, 1981, to November 30, 1982). The data for 1983 are preliminary.

†The CDC case definition is (1) acute noninflammatory encephalopathy documented by the clinical picture of alteration in the level of consciousness and, if available, a record of cerebrospinal fluid containing 8 leukocytes or less per mm^3, or histologic sections of the brain demonstrating cerebral edema without perivascular or meningeal inflammation, (2) fatty metamorphosis of the liver diagnosed by either biopsy or autopsy or a threefold or greater rise in the levels of either the SGOT, SGPT, or serum ammonia, and (3) no known more reasonable explanation for the cerebral or hepatic abnormalities.

TABLE 1. Incidence of Reye syndrome, by year — United States, 1973-1974 and 1977-1983

Year (Dec.1-Nov.30)	Major influenza activity	Number of cases	Incidence*	Death-case ratio	
				Number of deaths/cases†	Ratio (%)
1973-1974§	B	379	0.58	157/379	41
1977	B	454	0.71	156/373	42
1978	A(H3N2/H1N1)	237	0.37	66/225	29
1979	A(H1N1)	389	0.62	113/349	32
1980	B	548	0.88	114/516	22
1981	A(H3N2/H1N1)	313	0.49	89/296	30
1982	B	222	0.35	73/208	35
1983¶	A(H3N2/H1N1)	191	0.30	56/173	32

*Patients per 100,000 population < 18 years of age.

†With known outcome.

§For the period December 15, 1973-June 30, 1974.

¶Preliminary count; reported cases as of January 15, 1984.

Reye Syndrome Surveillance -- Continued

distribution of cases reflected the seasonality of respiratory viral infections among children, particularly influenza (predominantly influenza type B in 1982 and type A[H3N2] in 1983) and varicella. For 196 (88%) of the patients in 1982 and 175 (92%) in 1983, a type of prodromal illness experienced within 2 weeks before onset of vomiting or neurologic symptoms of Reye syndrome was reported. For each of these 2 years, the prodromal illness was characterized by respiratory symptoms (57% and 73%, respectively), varicella exantham (24% and 14%, respectively), diarrhea without respiratory symptoms (4% in both years), or other signs or symptoms, including fever alone (15% and 9%, respectively).

As reported in earlier years, the majority of patients (80% in 1982 and 79% in 1983) were admitted to hospitals in precomatose stages of Reye syndrome, stages 0, 1, or 2. Although these proportions are slightly higher than those reported before 1980, they represent a decline from the peak (86%) reached in 1981. In 1982 and 1983, the plurality of patients by stage of admission was stage 2 (34% and 40%, respectively, of the approximately 95% of patients each year for whom this information was reported). The second most frequently reported stage of admission was stage 1 (32% in 1982 and 30% in 1983).

The short-term outcome was reported for 208 (94%) of the 222 Reye syndrome patients in 1982 and 173 (91%) of the 191 patients in 1983. The case-fatality ratios for these 2 years were 35% and 32%, respectively (Table 1).

Reported by Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: The numbers of both nonfatal and fatal cases of Reye syndrome reported through the national surveillance system are useful in providing crude annual comparisons but probably underestimate the true incidence and mortality of this illness. Because state health departments and CDC are more likely to become aware of fatal cases, the reported case-fatality ratios are probably overestimates.

The relatively low reported incidence of Reye syndrome in 1982 and 1983 probably reflects, at least in part, the intensity and/or type of influenza activity. In terms of all available criteria, the intensity of influenza B activity in early 1982 was low (*1*). The intensity of influenza activity in 1983 was greater, although not as great as in 1980-1981, and the predominant isolate was influenza A(H3N2), which has been previously associated with fewer large clusters of Reye syndrome than influenza B.

The apparent drop in varicella-associated cases in 1982 (47 cases) and 1983 (25 cases) is currently less well explained by changes in virus activity; 83 such cases were reported in 1981. From 1977 through 1982 (the years for which data are most recently available), the reported incidence of varicella itself has remained relatively stable.

The intensity of Reye syndrome surveillance varies by both geographic area and year, and hence, changes in reported incidence must be cautiously interpreted. The intensity of surveillance usually depends, in part, on the awareness of the illness among the public and medical personnel and the ease and perceived importance of reporting cases. The relatively low reported incidence of Reye syndrome in 1982 and 1983 occurred during a period of increased publicity about the reported association between Reye syndrome and the use of salicylates for children with chickenpox or influenza-like illness (*2*).

As of January 27, 1984, increasing numbers of states have reported influenza virus isolates, type A(H1N1) predominantly, as well as types A(H3N2) and B. Physicians and other appropriate personnel in the medical community are encouraged to continue reporting Reye syndrome cases to CDC through their local and state health departments. Reye syndrome case-report forms can be obtained from state health departments or CDC, c/o Epidemiology Office, Division of Viral Diseases, Atlanta, Georgia 30333.

References

1. CDC. Influenza surveillance summary, 1981-1982 season. MMWR 1982;31:375-8.
2. CDC. National surveillance of Reye syndrome 1981: update, Reye syndrome and salicylate usage. MMWR 1982;31:53-6.

Toxic-Shock Syndrome and the Vaginal Contraceptive Sponge

Four reported cases of toxic-shock syndrome (TSS) meeting CDC criteria (*1*) occurred in late 1983 among users of the vaginal contraceptive sponge (Today*). The first patient, a Georgia resident, developed symptoms on October 16, while using a sponge for the first time. She was 37 days post-partum. The second patient, from Oregon, developed symptoms on November 14 following several unsuccessful attempts at sponge removal that resulted in fragmentation of the product. The third case occurred on November 20 in a woman from California; the sponge had been in place 32 hours and was removed with difficulty. The fourth case, also from California, occurred on December 10 in a woman who had left the sponge in place for 5 days. Patients ranged in age from 20 to 29 years; all were white, non-Hispanic. None was menstruating at the time symptoms developed.

All patients manifested fever, hypotension, diffuse rash, desquamation, nausea, vomiting, myalgias, mucous membrane hyperemia, and vaginal discharge. All were hospitalized and treated with intravenous fluids and antimicrobial agents, and all recovered. Vaginal cultures in every case were positive for *Staphylococcus aureus*.

The Today Vaginal Contraceptive Sponge was introduced to the over-the-counter market in June 1983. The sponge is made of polyurethane impregnated with the spermicide nonoxynol-9 and is intended to provide 24 hours of contraception. The manufacturer (VLI Corporation) estimates that, as of December 1983, 5 million sponges had been used by more than 250,000 women in 24 western and southern states. During clinical trials, the average woman using only this method of contraception used 10 sponges per month. At the time the sponge was licensed, the U.S. Food and Drug Administration (FDA) required that the package insert contain a warning that clinical trials had not been large enough to assess the risk of TSS and that users should seek medical care if symptoms compatible with TSS developed. Instructions for sponge use indicate that it should not be left in place for more than 30 hours.

Following a meeting with FDA representatives on December 16, the manufacturer highlighted the warning on the package insert and placed a similar warning on the outer box.

Women who use contraceptive sponges should read the package insert carefully and follow the manufacturer's directions. Users who experience difficulty removing a sponge and/or sponge fragmentation should consult a physician. Women who have had TSS, particularly if it was associated with the use of a contraceptive sponge or tampon, should also consult a physician before beginning or resuming use of either. Similarly, post-partum women, who may be at increased risk of developing TSS, should seek medical advice before using the contraceptive sponge.

Reported by GA Faich, S Sobel, J Bilstad, National Center for Drugs and Biologics, U.S. Food and Drug Administration, Rockville, Maryland; Respiratory and Special Pathogens Epidemiology Br, Div of Bacterial Diseases, Center for Infectious Diseases, CDC.

Editorial Note: This report of four TSS cases among women using the contraceptive sponge is presented to inform physicians that a potential problem may exist and to encourage the reporting of additional cases. Given the small number of known cases and the potential reporting biases, the risk of TSS associated with contraceptive-sponge use remains uncertain.

All contraception methods, as well as unprotected intercourse, involve risk either from the methods themselves or from unintended pregnancy. The contraceptive sponge is an effective means of contraception, with a failure rate similar to that for diaphragms (*2*); thus, the overall magnitude of the health risks associated with contraceptive-sponge use, including TSS, should be compared with the health risks of other methods of contraception and unprotected intercourse.

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*Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Toxic-Shock Syndrome — Continued

If one assumes that the four cases reported so far were all attributable to contraceptive sponges, a minimum estimate of the incidence of nonmenstrual TSS associated with sponge use would be 10 cases (95% CI Poisson distribution, 3-20) per year per 100,000 women who use contraceptive sponges as their only method of contraception. (In comparison, five to 10 menstrual cases per year are expected among 100,000 women who use tampons [*3*]). Current mortality from TSS is 3%; therefore, 0.3 deaths (0.1-0.8) per year would be expected from these 10 cases of TSS among contraceptive-sponge users, in addition to an estimated 1.2 deaths related to pregnancy due to contraceptive-sponge failure. The overall number of deaths (1.5) attributable to contraceptive-sponge use would thus be comparable to the number of deaths associated with the use of other effective contraception methods (range 0.1-5.2/100,000 women 20-29 years of age, depending on method used) and less than the risk of death from pregnancy among women using no contraception (8.3/100,000 women 20-29 years of age) (*4*).

Although not included in these calculations, the use of contraception methods other than the contraceptive sponge may also affect the risk of developing TSS. For example, cases of nonmenstrual TSS among diaphragm users have been reported previously (*5-7*), and, to date, 18 definite and five probable cases associated with diaphragm use have been reported

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TABLE I. Summary—cases specified notifiable diseases, United States

Disease	4th Week Ending			Cumulative, 4th Week Ending		
	January 28, 1984	January 29, 1983	Median 1979-1983	January 28, 1984	January 29, 1983	Median 1979-1983
Acquired Immunodeficiency Syndrome (AIDS)	19	N	N	105	N	N
Aseptic meningitis	87	89	78	352	357	313
Encephalitis: Primary (arthropod-borne & unspec.)	17	11	15	42	71	59
Post-infectious	1	1	1	3	5	5
Gonorrhea: Civilian	17,229	18,362	18,381	63,732	73,452	73,452
Military	361	515	560	1,575	1,990	2,212
Hepatitis: Type A	451	552	546	1,444	1,762	1,702
Type B	441	414	355	1,456	1,543	1,269
Non A, Non B	84	59	N	212	190	N
Unspecified	147	158	196	395	528	657
Legionellosis	10	8	N	26	38	N
Leprosy	2	5	2	14	24	10
Malaria	2	9	12	38	38	49
Measles: Total*	17	11	38	45	37	124
Indigenous	16	7	N	40	27	N
Imported	1	4	N	5	10	N
Meningococcal infections: Total	51	65	70	174	210	211
Civilian	51	65	69	174	203	207
Military	-	-	1	-	7	1
Mumps	64	114	114	230	306	388
Pertussis	28	20	20	92	60	60
Rubella (German measles)	6	21	51	29	49	168
Syphilis (Primary & Secondary): Civilian	552	707	602	1,984	2,699	2,270
Military	19	11	9	30	45	35
Toxic Shock syndrome	3	14	N	20	35	N
Tuberculosis	358	389	447	1,184	1,294	1,513
Tularemia	2	-	1	5	8	8
Typhoid fever	5	8	7	17	26	26
Typhus fever, tick-borne (RMSF)	1	2	2	4	6	6
Rabies, animal	53	102	100	177	344	323

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1984		Cum. 1984
Anthrax	-	Plague	-
Botulism: Foodborne	-	Poliomyelitis: Total	-
Infant (Calif. 2)	4	Paralytic	-
Other	1	Psittacosis (Ohio 1)	4
Brucellosis (Va. 1, Fla. 1)	5	Rabies, human	-
Cholera	-	Tetanus	-
Congenital rubella syndrome	-	Trichinosis	2
Diphtheria	-	Typhus fever, flea-borne (endemic, murine)	2
Leptospirosis	-		

*One of the 17 reported cases for this week was imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending January 28, 1984 and January 29, 1983 (Fourth Week)

Reporting Area	AIDS	Aseptic Menin-gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel-losis	Leprosy
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1984	1984	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1983	1984	1984	1984	1984	1984	Cum. 1984
UNITED STATES	105	87	42	3	63,732	73,452	451	441	64	147	10	14
NEW ENGLAND	5	3	1	-	2,172	1,858	6	19	1	23	1	1
Maine	-	1	-	-	91	99	1	4	-	-	-	-
N.H.	-	-	1	-	41	50	-	1	-	1	-	-
Vt.	-	-	-	-	23	31	1	-	-	-	-	-
Mass.	2	1	-	-	773	815	4	11	-	22	1	1
R.I.	-	-	-	-	98	103	-	-	-	-	-	-
Conn.	3	1	-	-	1,146	760	-	3	1	-	-	-
MID ATLANTIC	13	3	4	-	7,251	8,521	65	73	5	9	-	1
Upstate N.Y.	-	2	-	-	980	1,139	2	12	1	-	-	1
N.Y. City	-	1	-	-	3,186	3,638	51	22	-	6	-	-
N.J.	13	-	2	-	1,019	1,412	12	39	4	3	-	-
Pa.	-	-	2	-	2,066	2,332	-	-	-	-	-	-
E.N. CENTRAL	8	20	9	-	8,847	10,326	67	51	5	16	2	1
Ohio	7	11	3	-	2,300	2,555	40	15	1	9	2	-
Ind.	-	-	-	-	1,452	1,372	4	6	-	-	-	-
Ill.	-	4	1	-	1,266	2,680	5	6	-	1	-	-
Mich.	1	5	4	-	2,699	2,811	18	24	4	6	-	1
Wis.	-	-	1	-	930	908	-	-	-	-	-	-
W.N. CENTRAL	1	2	1	-	2,870	3,452	12	10	5	1	-	-
Minn.	-	1	-	-	475	558	1	1	2	-	-	-
Iowa	1	-	1	-	342	363	1	2	2	-	-	-
Mo.	-	-	-	-	1,228	1,578	3	4	1	1	-	-
N. Dak.	-	-	-	-	30	40	-	-	-	-	-	-
S. Dak.	-	-	-	-	91	87	7	2	-	-	-	-
Nebr.	-	-	-	-	200	206	-	-	-	-	-	-
Kans.	-	1	-	-	504	620	-	1	-	-	-	-
S. ATLANTIC	13	24	9	3	16,151	18,550	22	66	10	4	-	-
Del.	1	-	1	-	284	462	-	-	-	-	-	-
Md.	5	2	2	-	2,483	2,489	1	7	1	2	-	-
D.C.	2	-	-	-	1,036	1,355	-	2	-	-	-	-
Va.	2	9	3	2	1,660	1,719	2	10	1	-	-	-
W. Va.	-	-	2	-	171	188	4	1	2	1	-	-
N.C.	-	4	-	1	2,560	2,244	1	8	3	1	-	-
S.C.	-	1	-	-	1,455	1,859	-	14	-	-	-	-
Ga.	-	-	-	-	3,162	3,162	6	12	-	-	-	-
Fla.	3	8	1	-	3,340	5,072	8	12	3	-	-	-
E.S. CENTRAL	-	7	2	-	4,992	6,239	24	58	7	2	-	-
Ky.	-	-	-	-	653	834	15	19	1	1	-	-
Tenn.	-	2	1	-	2,137	2,438	2	24	-	1	-	-
Ala.	-	5	1	-	1,465	1,780	4	14	6	-	-	-
Miss.	-	-	-	-	737	1,187	3	1	-	-	-	-
W.S. CENTRAL	1	4	1	-	9,136	10,480	82	43	1	67	-	-
Ark.	-	-	-	-	852	746	-	2	-	-	-	-
La.	-	-	-	-	2,291	1,428	5	4	-	-	-	-
Okla.	1	-	-	-	1,036	1,243	11	10	-	3	-	-
Tex.	-	4	1	-	4,957	7,063	46	27	1	64	-	-
MOUNTAIN	4	2	1	-	1,874	2,103	35	17	6	3	1	-
Mont.	-	-	-	-	100	106	2	2	-	-	-	-
Idaho	-	-	-	-	88	95	2	1	1	1	-	-
Wyo.	-	-	-	-	42	78	-	-	-	-	-	-
Colo.	-	1	-	-	505	589	8	3	2	-	-	-
N. Mex.	-	-	-	-	264	272	2	-	-	-	-	-
Ariz.	4	-	-	-	442	495	11	4	3	1	1	-
Utah	-	1	1	-	103	91	8	2	-	1	-	-
Nev.	-	-	-	-	330	377	2	5	-	-	-	-
PACIFIC	60	22	14	-	10,639	11,923	158	104	24	22	6	11
Wash.	-	1	-	-	336	716	6	3	-	1	-	1
Oreg.	-	-	-	-	564	513	33	8	3	3	-	-
Calif.	60	18	14	-	9,388	10,234	118	90	21	18	6	9
Alaska	-	1	-	-	218	224	1	-	-	-	-	-
Hawaii	-	2	-	-	133	236	-	3	-	-	-	1
Guam	-	U	-	-	-	16	U	U	U	U	U	-
P.R.	-	3	-	-	282	247	5	10	-	9	-	-
V.I.	-	U	-	-	28	27	U	U	U	U	U	-
Pac. Trust Terr.	-	U	-	-	-	-	U	U	U	U	U	-

N: Not notifiable U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending January 28, 1984 and January 29, 1983 (Fourth Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1984	1984	Cum. 1984	1984	Cum. 1984	Cum. 1983	Cum. 1984	1984	Cum. 1984	1984	Cum. 1984	Cum. 1983	1984	Cum. 1984	Cum. 1983
UNITED STATES	38	16	40	1	5	37	174	64	230	28	92	60	6	29	49
NEW ENGLAND	4	-	-	-	-	-	5	2	5	-	1	3	-	1	-
Maine	-	-	-	-	-	-	-	2	3	-	-	-	-	-	-
N.H.	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Vt.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Mass.	3	-	-	-	-	-	1	-	1	-	-	1	-	1	-
R.I.	-	-	-	-	-	-	2	-	-	-	1	1	-	-	-
Conn.	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
MID ATLANTIC	1	-	-	-	-	-	18	4	38	1	3	13	-	-	2
Upstate N.Y.	-	-	-	-	-	-	4	-	6	1	3	8	-	-	1
N.Y. City	-	-	-	-	-	-	1	-	1	-	-	1	-	-	1
N.J.	-	-	-	-	-	-	5	4	30	-	-	3	-	-	-
Pa.	1	-	-	-	-	-	8	-	1	-	-	1	-	-	-
E.N. CENTRAL	1	11	20	-	-	17	34	19	60	6	9	19	1	3	10
Ohio	-	-	-	-	-	-	15	-	12	4	4	9	-	-	1
Ind.	-	-	-	-	-	-	4	6	6	-	-	2	-	-	-
Ill.	1	11	20	-	-	17	5	4	19	1	3	4	1	2	1
Mich.	-	-	-	-	-	-	8	9	19	1	1	1	-	1	2
Wis.	-	-	-	-	-	-	2	-	4	-	1	3	-	-	6
W.N. CENTRAL	3	-	-	-	-	-	18	4	10	6	36	3	1	2	6
Minn.	-	-	-	-	-	-	1	-	-	-	2	-	-	-	2
Iowa	-	-	-	-	-	-	8	-	1	1	3	1	-	-	-
Mo.	2	-	-	-	-	-	5	-	2	-	-	1	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
S. Dak.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Kans.	1	-	-	-	-	-	2	4	6	5	31	1	1	1	4
S. ATLANTIC	7	-	-	-	-	2	47	4	17	8	12	7	-	1	1
Del.	2	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Md.	2	-	-	-	-	-	3	-	4	1	1	1	-	-	-
D.C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Va.	1	-	-	-	-	1	6	-	1	3	4	1	-	-	-
W. Va.	-	-	-	-	-	-	1	1	3	1	2	1	-	-	-
N.C.	1	-	-	-	-	-	6	-	2	1	1	-	-	-	-
S.C.	1	-	-	-	-	1	5	-	-	-	-	-	-	-	-
Ga.	-	-	-	-	-	-	12	-	1	2	2	4	-	-	1
Fla.	-	-	-	-	-	-	13	N	N	-	2	-	-	1	-
E.S. CENTRAL	-	-	-	-	-	-	8	1	5	-	2	-	-	-	1
Ky.	-	-	-	-	-	-	2	-	3	-	1	-	-	-	1
Tenn.	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-
Ala.	-	-	-	-	-	-	3	1	2	-	-	-	-	-	-
Miss.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
W.S. CENTRAL	-	-	-	-	-	-	10	4	5	6	9	6	2	5	7
Ark.	-	-	-	-	-	-	-	-	-	5	8	-	1	1	-
La.	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Okla.	-	-	-	-	-	-	2	N	N	1	1	1	-	-	-
Tex.	-	-	-	-	-	-	6	4	5	-	-	5	1	4	7
MOUNTAIN	1	3	15	-	-	-	5	6	36	1	12	7	-	2	1
Mont.	-	-	-	-	-	-	1	-	1	-	1	1	-	-	-
Idaho	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colo.	-	-	-	-	-	-	3	-	-	-	9	2	-	-	-
N. Mex.	-	-	-	-	-	-	-	N	N	-	1	3	-	-	-
Ariz.	1	-	-	-	-	-	1	6	34	-	-	-	-	-	-
Utah	-	3	15	-	-	-	-	-	-	-	-	1	-	2	1
Nev.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC	21	2	5	1	5	18	29	20	54	-	8	2	2	15	21
Wash.	2	-	-	-	-	-	2	8	12	-	5	-	-	-	-
Oreg.	1	-	-	-	-	-	8	N	N	-	-	-	-	-	-
Calif.	17	2	5	-	3	17	18	11	39	-	3	2	2	15	21
Alaska	-	-	-	-	-	-	1	1	3	-	-	-	-	-	-
Hawaii	1	-	-	1†	2	1	-	-	-	-	-	-	-	-	-
Guam	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
P.R.	2	-	-	-	-	5	-	6	13	-	-	1	-	-	-
V.I.	-	U	-	U	-	3	-	U	-	U	-	-	U	-	1
Pac. Trust Terr.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending January 28, 1984 and January 29, 1983 (Fourth Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1984	Cum. 1983	1984	Cum. 1984	Cum. 1983	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1984
UNITED STATES	1,984	2,699	3	1,184	1,284	5	17	4	177
NEW ENGLAND	48	73	-	37	19	-	-	-	1
Maine	1	-	-	3	-	-	-	-	1
N.H.	-	-	-	1	-	-	-	-	-
Vt.	-	1	-	1	-	-	-	-	-
Mass.	34	50	-	14	6	-	-	-	-
R.I.	3	1	-	7	4	-	-	-	-
Conn.	10	21	-	11	9	-	-	-	-
MID ATLANTIC	257	279	-	238	256	-	2	-	19
Upstate N.Y.	17	15	-	33	50	-	1	-	-
N.Y. City	143	168	-	91	95	-	-	-	-
N.J.	52	53	-	59	54	-	1	-	-
Pa.	45	43	-	55	57	-	-	-	19
E.N. CENTRAL	84	160	1	149	208	-	4	-	11
Ohio	24	42	1	38	37	-	2	-	1
Ind.	21	22	-	12	26	-	1	-	2
Ill.	17	70	-	56	100	-	-	-	3
Mich.	14	16	-	33	36	-	-	-	-
Wis.	8	10	-	10	9	-	1	-	5
W.N. CENTRAL	35	32	-	26	40	2	-	-	25
Minn.	6	16	-	2	3	-	-	-	3
Iowa	3	2	-	4	8	-	-	-	8
Mo.	22	11	-	13	23	2	-	-	3
N. Dak.	-	-	-	-	-	-	-	-	8
S. Dak.	-	-	-	1	2	-	-	-	-
Nebr.	-	1	-	3	1	-	-	-	1
Kans.	4	2	-	3	3	-	-	-	2
S. ATLANTIC	635	693	1	292	247	-	-	-	24
Del.	-	5	-	3	-	-	-	-	-
Md.	38	34	-	46	6	-	-	-	-
D.C.	18	38	-	8	11	-	-	-	-
Va.	38	53	-	12	15	-	-	-	13
W. Va.	4	2	-	10	14	-	-	-	1
N.C.	60	75	-	50	8	-	-	-	-
S.C.	62	52	-	43	32	-	-	-	-
Ga.	117	117	-	34	50	-	-	-	10
Fla.	298	317	1	86	111	-	-	-	-
E.S. CENTRAL	129	192	-	87	124	-	1	1	10
Ky.	7	11	-	19	29	-	-	-	2
Tenn.	33	50	-	15	42	-	1	-	3
Ala.	43	89	-	49	40	-	-	1	5
Miss.	46	42	-	4	13	-	-	-	-
W.S. CENTRAL	423	679	-	65	100	-	-	1	53
Ark.	15	9	-	1	2	-	-	1	8
La.	113	138	-	10	38	-	-	-	-
Okla.	10	20	-	12	20	-	-	-	5
Tex.	285	512	-	42	40	-	-	-	40
MOUNTAIN	49	65	1	19	50	3	3	2	6
Mont.	-	2	-	-	5	-	2	2	3
Idaho	2	1	1	1	3	-	-	-	-
Wyo.	1	1	-	-	1	-	-	-	-
Colo.	4	10	-	-	-	-	-	-	-
N. Mex.	8	28	-	6	10	-	1	-	1
Ariz.	15	14	-	10	29	1	-	-	2
Utah	3	1	-	1	-	2	-	-	-
Nev.	16	8	-	1	2	-	-	-	-
PACIFIC	324	526	-	271	240	-	7	-	28
Wash.	-	25	-	6	8	-	-	-	-
Oreg.	11	5	-	11	12	-	-	-	-
Calif.	303	488	-	233	202	-	7	-	27
Alaska	-	1	-	-	4	-	-	-	1
Hawaii	10	7	-	21	14	-	-	-	-
Guam	-	-	U	-	-	-	-	-	-
P.R.	63	27	-	19	31	-	1	-	2
V.I.	1	1	U	-	-	-	-	-	-
Pac. Trust Terr.	-	-	U	-	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending January 28, 1984 (Fourth Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	665	455	147	29	18	16	61
Boston, Mass.	173	112	37	10	4	10	21
Bridgeport, Conn.	34	20	9	2	3	-	3
Cambridge, Mass.	27	20	5	1	1	-	3
Fall River, Mass.	32	26	4	1	1	-	-
Hartford, Conn.	82	45	13	2	1	1	1
Lowell, Mass.	16	15	-	-	1	-	2
Lynn, Mass.	14	9	4	1	-	-	-
New Bedford, Mass.	28	23	5	-	-	-	3
New Haven, Conn.	68	46	13	5	4	-	6
Providence, R.I.	66	41	18	2	3	2	4
Somerville, Mass.	14	9	5	-	-	-	2
Springfield, Mass.	44	26	13	4	-	1	1
Waterbury, Conn.	22	15	5	1	-	1	3
Worcester, Mass.	65	48	16	-	-	1	12
MID. ATLANTIC	2,912	1,940	635	198	72	66	132
Albany, N.Y.	43	29	10	1	3	-	4
Allentown, Pa.	20	16	4	-	-	-	-
Buffalo, N.Y.	142	88	38	7	4	5	9
Camden, N.J.	26	19	6	1	-	-	1
Elizabeth, N.J.	36	23	9	2	2	-	-
Erie, Pa.†	35	25	4	3	3	-	-
Jersey City, N.J.	57	41	9	4	1	2	-
N.Y. City, N.Y.	1,574	1,050	325	127	39	33	64
Newark, N.J.	68	38	19	5	3	2	7
Paterson, N.J.	29	22	2	2	3	-	2
Philadelphia, Pa.†	393	242	109	27	5	10	23
Pittsburgh, Pa.†	69	42	18	3	2	4	1
Reading, Pa.	30	23	4	3	-	-	3
Rochester, N.Y.	117	87	20	5	4	1	9
Schenectady, N.Y.	40	32	7	1	-	-	-
Scranton, Pa.†	29	25	4	-	-	-	2
Syracuse, N.Y.	113	76	26	5	2	4	4
Trenton, N.J.	36	22	9	2	-	3	1
Utica, N.Y.	29	24	4	-	1	-	1
Yonkers, N.Y.	26	16	8	-	-	2	1
E.N. CENTRAL	2,455	1,580	571	149	73	81	77
Akron, Ohio	56	36	17	2	1	-	-
Canton, Ohio	44	32	10	2	-	-	5
Chicago, Ill.	592	365	148	42	22	15	12
Cincinnati, Ohio	165	108	34	12	5	6	22
Cleveland, Ohio	276	168	73	23	10	11	3
Columbus, Ohio	131	85	22	8	5	13	6
Dayton, Ohio	92	61	25	5	-	1	4
Detroit, Mich.	241	154	46	20	9	12	2
Evansville, Ind.	44	33	10	-	-	1	-
Fort Wayne, Ind.	47	30	15	-	1	1	2
Gary, Ind.	18	10	7	1	-	-	-
Grand Rapids, Mich.	52	41	10	1	-	-	-
Indianapolis, Ind.	172	99	44	12	10	7	2
Madison, Wis.	22	14	6	-	-	2	2
Milwaukee, Wis.	155	112	29	5	3	6	4
Peoria, Ill.	41	31	5	5	-	-	1
Rockford, Ill.	50	38	10	2	-	-	3
South Bend, Ind.	72	48	23	3	-	-	3
Toledo, Ohio	113	73	27	4	5	4	5
Youngstown, Ohio	72	54	10	4	2	2	1
W.N. CENTRAL	805	580	149	32	21	21	45
Des Moines, Iowa	80	56	17	3	3	1	9
Duluth, Minn.	35	29	4	2	-	-	2
Kansas City, Kans.	28	15	8	3	1	-	1
Kansas City, Mo.	104	74	23	3	4	-	6
Lincoln, Nebr.	39	32	6	-	-	1	3
Minneapolis, Minn.	86	61	11	7	3	4	2
Omaha, Nebr.	95	67	19	4	2	3	4
St. Louis, Mo.	195	129	46	6	6	8	11
St. Paul, Minn.	75	57	14	2	1	1	2
Wichita, Kans. §	68	60	1	2	1	3	5
S. ATLANTIC	1,198	725	277	129	28	39	62
Atlanta, Ga.	179	98	52	17	3	9	5
Baltimore, Md.	130	85	24	15	4	2	-
Charlotte, N.C.	92	48	34	6	2	2	7
Jacksonville, Fla.	113	70	32	7	1	3	7
Miami, Fla.	107	66	27	11	2	1	4
Norfolk, Va.	90	59	17	5	4	5	5
Richmond, Va.	65	43	17	3	1	1	10
Savannah, Ga.	67	44	14	4	-	5	9
St. Petersburg, Fla.	137	114	18	4	1	-	4
Tampa, Fla.	62	44	14	1	1	2	3
Washington, D.C.	110	29	15	50	8	8	4
Wilmington, Del.	46	25	13	6	1	1	4
E.S. CENTRAL	840	537	195	47	29	32	42
Birmingham, Ala.	142	91	36	7	5	3	4
Chattanooga, Tenn.	77	50	17	4	1	5	4
Knoxville, Tenn.	70	47	14	6	2	1	2
Louisville, Ky.	138	81	41	8	5	3	10
Memphis, Tenn.	128	81	18	8	4	17	6
Mobile, Ala.	73	49	17	5	1	1	7
Montgomery, Ala.	55	41	8	1	5	-	1
Nashville, Tenn.	157	97	44	8	6	2	8
W.S. CENTRAL	1,325	812	300	91	57	65	64
Austin, Tex.	91	55	18	12	6	-	6
Baton Rouge, La.	39	25	7	1	1	5	6
Corpus Christi, Tex.	46	33	9	3	1	-	1
Dallas, Tex.	200	117	47	13	9	14	2
El Paso, Tex.	53	43	4	2	2	2	5
Fort Worth, Tex.	92	60	19	2	7	4	7
Houston, Tex.	200	90	51	21	12	26	5
Little Rock, Ark.	73	46	20	3	3	1	5
New Orleans, La.	160	103	33	12	7	5	-
San Antonio, Tex.	178	118	41	10	3	6	15
Shreveport, La.	72	44	17	6	4	1	-
Tulsa, Okla.	121	78	34	6	2	1	12
MOUNTAIN	662	442	141	34	21	24	29
Albuquerque, N.Mex.	87	62	12	6	4	3	8
Colo. Springs, Colo.	27	23	2	1	-	1	1
Denver, Colo.	122	73	35	7	5	2	6
Las Vegas, Nev.	87	55	23	4	4	1	1
Ogden, Utah	27	21	5	-	-	1	-
Phoenix, Ariz.	167	114	34	11	4	4	5
Pueblo, Colo.	12	10	1	-	1	-	1
Salt Lake City, Utah	45	26	9	-	2	8	-
Tucson, Ariz.	88	58	20	5	1	4	7
PACIFIC	2,297	1,546	470	159	55	66	118
Berkeley, Calif.	18	13	4	1	-	-	-
Fresno, Calif.	63	40	10	6	5	2	2
Glendale, Calif.	38	28	8	2	-	-	1
Honolulu, Hawaii	59	44	12	1	1	1	5
Long Beach, Calif.	91	57	23	3	1	7	5
Los Angeles, Calif.	869	576	180	70	23	19	38
Oakland, Calif.	73	50	12	2	4	5	5
Pasadena, Calif.	42	31	5	4	1	1	3
Portland, Oreg.	141	100	29	6	2	4	9
Sacramento, Calif.	68	42	17	3	3	3	5
San Diego, Calif.	146	94	30	14	3	5	9
San Francisco, Calif.	194	123	38	24	5	4	3
San Jose, Calif.	206	147	41	11	3	4	17
Seattle, Wash.	161	110	34	6	3	8	7
Spokane, Wash.	45	36	7	1	-	1	3
Tacoma, Wash.	83	55	20	5	1	2	6
TOTAL	13,159††	8,617	2,885	868	374	410	630

* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

** Pneumonia and influenza

† Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

†† Total includes unknown ages.

§ Data not available. Figures are estimates based on average of past 4 weeks.

Toxic-Shock Syndrome — Continued

to CDC. Conversely, the use of oral contraceptives may reduce the risk of developing menstrual TSS (*8*).

Physicians and other health personnel are requested to report all suspected TSS cases to their state health departments, which will forward copies of the reports to CDC. Pending revision of the TSS report form, the method of contraception in suspected cases should be included in the "other information" section of the current form. TSS report forms can be obtained from local and state health departments or directly from CDC (telephone 404-329-3687).

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Carbon Monoxide Intoxication Associated with Use of a Gasoline-Powered Resurfacing Machine at an Ice-Skating Rink — Pennsylvania

On December 3, 1983, the Chester County (Pennsylvania) Health Department (CCHD) received a report that 15 persons had become acutely ill while participating in an ice-hockey game. The game was held on an enclosed rink housed in a local sports arena. Thirteen of the victims were teenaged players, and two were coaches. All but one were associated with the same team. One referee also complained of a severe headache but failed to recognize the significance of the symptom and did not halt the game.

Symptoms included: nausea, lethargy, and headache (12 team members); vomiting (five); unconsciousness (one). All were removed from the premises to provide fresh air and then transported to an area hospital. Oxygen was given enroute and in the hospital emergency room. A carboxyhemoglobin level taken nearly 2 hours after acute onset on the individual most affected was 9.8%. Extrapolating back (at the rate of 50% decrease in concentration per half hour of oxygen therapy) (*1*), carboxyhemoglobin levels were estimated at 35% or more at the time of his loss of consciousness. Fourteen victims were subsequently released; the one who had suffered unconsciousness was admitted for observation. The clinical diagnosis was suspected carbon monoxide (CO) intoxication. Telephone contact with CDC confirmed CO as a known hazard for such rinks (*2*).

Questioning of the coaches and families revealed no other common factors, and there was no evidence of food poisoning. Inspection of the skating rink's environmental conditions provided evidence for potential CO intoxication. The ice resurfacing machine, originally designed to be powered by propane, had been converted to a gasoline-driven engine. Sampling

Carbon Monoxide Intoxication — Continued

by CCHD environmental staff, using a Bendix Gastec* pump and CO analyzer tube, showed elevated levels of CO (up to 100 parts per million [ppm]) both immediately and 2-3 hours after running the resurfacing machine for 10 minutes. The CO concentration did not decrease appreciably after 2 hours; this was considered highly significant, because the machine is usually run from four to 11 times per day, and the enclosed arena had no specific exhaust system to provide for total air exchange. No other source of CO was found.

Following a cease-and-desist order issued by the CCHD, the resurfacing machine was taken out of service and successfully reconverted to a propane-power source. However, the initial propane reconversion also produced excessive levels of CO production, because the fuel mixture was "too rich." Following proper adjustment and tuning of the engine, subsequent indoor CO levels remained at an average 5-10 ppm, even after multiple uses of the machine up to 10 times per day. No additional illnesses have been reported.

The ability of CO to combine competitively with hemoglobin and the very strenuous level of metabolic activity involved in competitive, high-school-level hockey, would explain acute CO intoxication in such cases, particularly after multiple uses of the resurfacing machine in an inadequately ventilated enclosed arena.

Reported by HL Russell, VMD, JA Worth, WP Leuchak, P Terry, S Pollock, DA Turney, DA Jackson, JP Maher, MD, Chester County Health Department, Pennsylvania; Investigations Section, Special Studies Br, Chronic Diseases Div, Center for Environmental Health, CDC.

Editorial Note: Each year in the United States, an estimated 10,000 persons seek medical attention or lose at least 1 day of normal activity because of CO intoxication; at least 1,500 persons die from accidental exposure to high concentrations of CO. In addition to acute lethal CO poisoning, considerable hazard occurs from frequent exposure to low concentrations of CO in homes, work places, schools, and recreational buildings. Prolonged exposure to low levels of CO causes nausea, vomiting, and heart palpitations.

Numerous studies have demonstrated the seriousness of the CO problem. One study, in particular, further illustrates a potential problem in ice-skating rinks where gasoline-powered equipment is used in confined areas. A 1978 Harvard School of Public Health study found the national air quality standard adopted for outdoor exposure to CO† was exceeded in over 80% of the sampled hours in ice-skating rinks located in the Boston area. The use of gasoline-powered ice-resurfacing machines and the improper or inadequate venting of exhaust emissions caused this excessive level of CO.

Although exhaust from any improperly maintained vehicle can pose serious health hazards, the most common source of CO is automobile exhaust or exhaust vented into confined spaces. Because gasoline-powered lawnmowers, charcoal grills, wood stoves, fireplaces, gas space heaters, kerosene or gas-powered camp lanterns, heaters, stoves, and similar equipment also produce CO, proper ventilation and prevention of CO build-up must be assured to protect human health in areas where this equipment is operated.

The following guidelines summarize the most important techniques for preventing CO intoxication: (1) Provide adequate ventilation in areas where a known source of CO exists indoors. Ensure that all fuel-burning appliances or equipment are appropriately used indoors (i.e., never burn charcoal indoors), and are properly installed, adjusted, and operated; (2) do not operate gasoline-powered engines in confined spaces; (3) have a qualified technician in-

*Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

†The Environmental Protection Agency ambient air quality standard for CO is 9 ppm-maximum 8-hour concentration not to be exceeded more than once per year and 35 ppm-maximum 1-hour concentration not to be exceeded more than once per year. The National Institute for Occupational Safety and Health recommends that the occupational standard for CO be 35 ppm as a time-weighted average (TWA) exposure for an 8-hour workday and 200 ppm as a maximum concentration. The Occupational Safety and Health Administration's standard is 50 ppm as an 8-hour TWA.

Carbon Monoxide Intoxication — Continued

stall or convert fuel-burning equipment from one type of fuel to another, taking into consideration the ability of the ventilation system to handle additional indoor air pollution.

References

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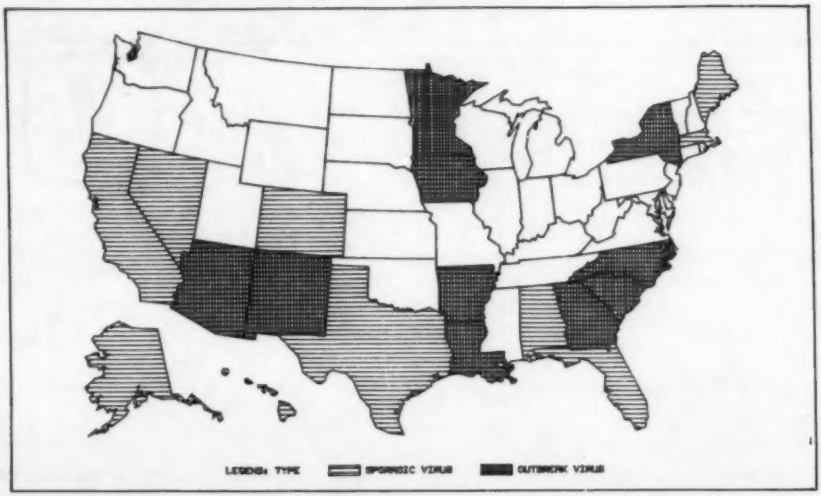
3. CDC. Carbon monoxide intoxication—a preventable environmental health hazard. MMWR 1982;31:529-31.

Update: Influenza Activity — United States

Morbidity reports show a continued increase in the number of outbreaks of influenza-like illness in the United States. In most cases for which laboratory results have been obtained, influenza type A(H1N1) has been isolated. The greatest spread of type A(H1N1) virus has occurred in the South Atlantic and South Central states. Preliminary results indicate that, in January, separate school outbreaks of influenza types A(H1N1) and B occurred in Hennepin County, Minnesota. The influenza type B outbreak was the first reported in the country this season. Following an almost total absence of type A(H3N2) virus isolates after the outbreaks in Alaska in November/December 1983, isolates have recently been reported from patients with sporadic cases in Arizona, New Mexico, and Pennsylvania.

Thus far in the 1983-1984 season, isolates of type A(H1N1) virus have been reported from the District of Columbia and 20 states: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Hawaii, Iowa, Louisiana, Maine, Massachusetts, Minnesota, Nevada, New Mexico, New York, North Carolina, South Carolina, and Texas; with associated outbreaks reported from Arizona, Arkansas, Georgia, Iowa, Louisiana, Minnesota, New

FIGURE 1. States with outbreaks or sporadic cases of influenza type A(H1N1) virus — United States, through January 27, 1984



Influenza Activity -- Continued

Mexico, New York, North Carolina, South Carolina, and the District of Columbia. Isolates of type B virus have been reported from 13 states: Arizona, Arkansas, California, Colorado, Hawaii, Minnesota, Nevada, New Mexico, New York, Oregon, Texas, Washington, and West Virginia; with associated outbreaks reported from Minnesota, and possibly Texas. Isolates of type A(H3N2) virus have been reported from Alaska, Arizona, New Mexico, Pennsylvania, and Tennessee; associated outbreaks were reported from Alaska at the end of 1983.

Reported by C Hedburg, Hennepin County Health Dept, D Peterson, MS, D Stiepen, J Braun, AG Dean, MD, State Epidemiologist, Minnesota Dept of Health; State Epidemiologists and Laboratory Directors; Div of Field Svcs, Epidemiology Program Office, Statistical Svcs Activity, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: Since 1977, type A(H1N1) virus has twice caused epidemics in children and young adults—in 1977-1978 and 1978-1979. Although related viruses have been isolated in each succeeding year, they have not caused widespread outbreaks again until this year. Several factors probably contribute, including waning levels of immunity among those infected during the 1977-1979 outbreaks and evolution of new variant strains (*1*). When multiple virus types circulate (i.e., type A[H1N1], type A[H3N2], and type B viruses), the relative prevalence of the different virus strains can alter during the course of the season and may vary between regions. Outbreaks caused by several virus types are also possible. Continued laboratory diagnosis is especially important under current circumstances.

Reference

1. CDC. Antigenic analysis of recent influenza virus isolates. MMWR 1983;32:195-6, 201.

Revision of Tuberculosis Column in Table III

Beginning this week, in Table III (Cases of specified notifiable diseases, United States), tuberculosis will be printed as cumulative totals only. The cumulative number of cases reported through the current week for 1984 appears in the first column under the heading for tuberculosis. The second column compares the cumulative number of cases reported through the same week last year. The total cases reported in the United States for the current week appear in Table I.

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